

Patent Claims as attaches to the IPER

1. Hydrogen storage comprising a metal for taking up and releasing hydrogen, which metal exhibits a nanocrystalline structure, and a metal carbonate.
2. Hydrogen storage according to claim 1, characterised in that the metal carbonate is a mixed carbonate.
3. Hydrogen storage according to anyone of the preceding claims, characterised in that the metal carbonate is the carbonate of the metals or metal mixtures of the rare earths.
4. Hydrogen storage according to anyone of the preceding claims, characterised in that the metal carbonate also exhibits a nanocrystalline structure.
5. Hydrogen storage according to claim 1, wherein the content of metal carbonate in from 0.005 mole % to 20 mole %.
6. Process for the production of a hydrogen storage according to anyone of claims 1 to 5, characterised in that the metal and/or the metal carbonate are mechanically milled.
7. Process according to claim 6, characterised in that the metal is first milled and subsequently, following the addition of the metal carbonate, the milling process is continued.
8. Process according to claim 6, characterised in that the metal carbonate is first milled and subsequently, following the addition of the hydrogen-storing metal, the milling process is continued.
9. Process according to anyone of claims 6 to 8, characterised in that the duration of the milling process is in the range of from one minute to 200 hours .

10. Process according to claim 9, characterised in that the duration of the milling process is in the range of from 20 hours to 100 hours.
11. Process according to anyone of claims 6 to 10, characterised in that the milling process is carried out under an inert gas atmosphere.
12. Process according to claim 11, characterised in that the inert gas is argon.
13. Process according to anyone of claims 6 to 12, characterised in that the milling process takes place with the addition of an organic solvent.
14. Process according to anyone of claims 6 to 10 or 13, characterised in that the milling process is carried out under an atmosphere containing carbon monoxide and/or carbon dioxide.